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Items 3 and 4 of the provisional agenda*
Preliminary review and appraisal of the implementation of the outcome of the World Summit for Social Development
Consideration of further actions and initiatives to implement the commitments made at the Summit

Contributions from relevant organs, funds, programmes and specialized agencies of the United Nations system

Note by the Secretariat

Addendum

Contribution from the United Nations Industrial Development Organization

1. The Secretariat circulates herewith for the information of the Preparatory Committee the attached report of the United Nations Industrial Development Organization (UNIDO), which is available in English only.

2. Another UNIDO report entitled "Economy, environment, employment", which provides a set of technical cooperation service modules, will be made available to the Preparatory Committee during its deliberations.

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Report of the United Nations Industrial Development Organization

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Preface

This study has been prepared by the Industrial Sector Surveys Team of the Research and Studies Branch as part of its research contribution to UNIDO's new initiative the *Alliance for Africa's Industrialization*. Complying with the principal focus of the *Alliance* on agro-related industries in Africa, the study attempts to suggest a programme approach within the perspectives of ensuring food security, alleviating poverty, enhancing agricultural productivity and attracting resource flows.

Placing utmost importance on the need for ensuring food security in Sub-Saharan Africa Chapter I explains the crucial role of the manufacturing sector in ensuring the long-term resilience of sustainable livelihood patterns, with an accent on export diversification as an important necessity. Chapter II highlights the priority areas that are of relevance to agro-related industrial development in Africa. Suggested programme components are presented in Chapter III, focussing on the objectives, mechanism, and inputs. Appendix A furnishes information on integrated research support functions for agro-related industrial development in Africa . Details of UNIDO's existing contribution to agro-industrial development in Africa are presented in Appendix B, while Appendix C highlights the role of major players in project rehabilitation.

This preliminary draft has been prepared for informal consultations during the expert group meeting, 24 and 25 February 1997. The final version of the paper will incorporate the ideas and substantive comments that arise during the consultations.

I. PROGRAMME OBJECTIVES OF AGRO-RELATED INDUSTRIAL DEVELOPMENT IN AFRICA

A. The achievement and maintenance of food security

The primary concern of the programme for agro-related industrial development must be the achievement and maintenance of **food security**. Born at the World Food Conference of 1974, the concept of food security has evolved to mean different things to different people. Smith *et. al.* (1992) counted more than 200 definitions of the term at the beginning of the 1990s. Our proposed **definition** is as follows:

> "Food security is the achievement and maintenance of a system of production and distribution which ensures that all individuals continuously have access to and are able to afford the food they want and need."

This definition puts emphasis on understanding food security as a process (not a state) which is the outcome of an organization of production and distribution of resources in a manner which sustains the likelihood of individuals by permanently eliminating the threat of involuntary food deprivation. The focus is thus not on supply or self-sufficiency or the maintenance of adequate world stocks but on access to and on the conversion of latent into effective demand. Using manufacturing as a dynamic force a system of production and distribution of resources must be developed and sustained which ensures the long-term resilience of sustainable livelihood patterns throughout the world community - and especially in its marginalized and vulnerable segments. Long-term resilience of sustainable livelihood patterns is feasible only when human wants are backed by purchasing power which stems from employment creation and income generation.

The conventional view of food security was of food as a primary need - but extensive research has shown that food intake is only one of the objectives people pursue - they may prefer to go hungry to preserve assets and livelihood patterns (de Wall, 1989). It is the long-term viability of the structures of production and distribution which guarantees continuing food access to all individuals. This access is not measured by "target"levels of consumption (Statz, 1990). The notion of nutritional adequacy is itself problematic. For any individual, nutritional requirement is a function of age, health, size, workload, environment and behaviour (Payne and Lipton, 1994). Estimates of calorie requirements for average adults and children with average activity patterns in average years are subject to constant revision (Payne, 1990). Adding adaptation strategies complicate the calculation (Payne and Lipton, 1994). Estimating precise calorie needs for different groups in the population is also very difficult.

There are no "meta narratives" which can describe a **universally valid** strategy for the promotion of food security. Policy must be crafted to blend with diverse moral perceptions, cultures, eco-systems and technologies. Nutritional adequacies (necessarily culturally defined) are a necessary but not sufficient condition for food security. Food security is a multi-objective complex phenomenon which requires the adoption of a flexible and diversified approach to promote livelihood resilience especially among vulnerable and marginalized groups.

A diversity of **programme alternatives** rather than a single "optimal" solution is required. Dreeze and Sen (1989, p. 102) make this same point when arguing for an "adequate plurality of responses". Food security design should follow a "process" rather than a "blue print" approach with emphasis on decentralization, innovation and multi-sectorality (Maxwell, 1996).

Access to food is determined by entitlements which are derived from possession of assets and access to public resources. The risk of entitlement/access failures determines the level of vulnerability. Marginal groups are partly defined by the high proportion of the resources they have access to being committed to food procurement. For them, as for several other groups, food security is a function of livelihood security. Industrial policy must be clearly focused on enhancing livelihood security. It must facilitate the development of "adaptive" strategies which increase people's entitlements and not just "coping" strategies which are

of agricultural output, development of storage and distribution networks are adaptive strategies necessary for enhancing food security. They can be particularly effective if carefully targeted to enhance the entitlements of the marginalized groups - those within the bottom 10 per cent of the national income distributional "pyramid", with no access to land and possessing little human capital.

Food security is thus associated with **income** and the (seasonal) variability of **agricultural prices** which in Africa are crucially dependent on the growth of agricultural production. It is clear that sub-Saharan Africa's food consumption exceeds food production, and that the deficit in grains is expected to reach 51 million tonnes, or 25 per cent of world grain trade, by the year 2000 (Marter and Gordon, 1996). Unless production expands more rapidly, this deficit will need to be met by imports, a growing proportion of which is food aid (approximately 40 per cent now compared with 20 per cent in the mid-1970s).

The special needs of African agriculture over the next 20 years include systems that can deal with periodic **drought**, sustaining intensification, and increasing labour productivity, and given the largely failed attempts to transfer Asian intensification experiences to Africa, there has to be a continued search for systems or adaptations that work for Africa.

The growing importance of agricultural intensification arises from the pressure of on-going **population** growth in the context of constrained availability of agricultural land. For example, in Kenya, Senegal, Malawi, and Nigeria, the amount of cultivable land available per person was no more than 0.75 ha in 1985. Given current population trends, the per capita availability of cultivable land by 2000 will have fallen to less than 0.5 ha to a tiny 0.1 ha (Marter and Gordon, 1996).

In order to **protect fragile soils and natural habitats**, most of the future increase in agricultural production will have to be realized by raising yields on existing cultivation areas, rather than by extending the area under cultivation. To the extent that the latter does take place, it is likely to put further pressure on forested areas and resources (Saran, 1994). In fisheries and livestock, future systems will also increasingly focus on intensive input regimes that may impose trade-offs with agriculture.

Conventional **intensification strategies** involve the application of higher levels of inorganic inputs and/or diverting water for irrigation. In future, these components may have to be amplified - for example, it is believed that doubling food production in India by 2030 can be achieved but it will require a fourfold increase in fertilizer application. An increase of this magnitude in the intensity of farm operations will place a heavy burden on the environment and raises the risk of soil degradation, fertilizer misuse, spillovers from chemicals and excessive water absorption. Clearly, if agricultural intensification is to be sustainable, it must be based on environmentally-friendly technologies and management practices.

In Africa, however, there are **few models of agricultural intensification**, as yet, which appear replicable. Currently, only 8 per cent of cereal production is under irrigation (compared to 20-40 per cent in other developing regions), and the conventional high-input irrigation package is only likely to work in certain locations because of a combination of physical and economic factors, e.g. soil structure and the configuration of river basins; the difficulties of applying high-cost irrigation for the production of relatively low-value staples (FAO, 1993).

More widely applicable packages will probably be less intensive and more flexible than has typically been the case in **Asia**. They might comprise diverse components including: early maturing crops, drought-resistant cash crops, perennials, agro-forestry and the exploitation of crop/livestock linkages. A key issue will be the development of appropriate delivery systems to go with such approaches.

The **technical options** for increasing crop production mainly concern planting material, agronomic practice and the use of purchased inputs - the relative importance of each of these differ according to the region under consideration. These potentially yield-increasing technological changes depend upon the scientific and technical capacity being in place to develop, and institutional support to sustain, appropriate new biological, chemical and mechanical technologies (improved and hybrid seeds, fertilizers and machinery, for example). In sub-Saharan Africa the recent run-down in research capacity will take time to redress. The differing staple crop focus compared to many other regions - coarse grains and root crops - may also imply more fragmented solutions because of the diversity (and instability) of environments within which they are cultivated. Africa

is experiencing rapid urbanization - expected to reach 40 per cent by 2000. This increases the proportion of people not producing their own food. Urbanization will affect the nature and location of food production, processing and consumption.

The growth in urban centres may create expanding markets for farm products and lead to the increased supply and availability of farm inputs and services. It will also influence the development of peri-urban (even urban) agricultural and food processing operations. Additionally, for many urban populations, imported foods (particularly rice and oils) will be relatively cheap, given that many of the largest cities are on the coast.

The implications of urbanization are clearly important and create many opportunities. The initial task is to understand the processes and, particularly, the nature of changing consumption patterns associated with urbanization, in order to identify programme priorities. There would certainly appear to be opportunities which relate to processing, storage and distribution; informal sector urban food processing; urban and peri-urban agriculture; and rural agricultural intensification based on a cheaper supply of certain inputs. There is also the need to address the difficulties that are threatened via growing urban pollution, and its impact on the wider environment.

B. Increasing agricultural productivity

Enhancing food security requires continued **increase in agricultural productivity** which should be the second major objective of UNIDO's agro-related industrial development programme for Africa. Without productivity growth, increase in income - especially of the vulnerable and marginalized groups - is not sustainable. There is some evidence to show that agricultural productivity has increased in a broad range of African countries since 1985. Block (1995) using the "wheat units" approach to output aggregation shows that in physical terms agricultural output grew at the rate of 3.2 per annum during 1983-88 (p.390). The method used by Block for calculating "wheat equivalents" is unsatisfactory for he applies US wheat relative prices in his calculation and not price data from the countries in his sample. He himself recognizes that this introduces an upward bias in his estimations (1995, p. 385, footnote 8). Nevertheless, growth in some key crops - e.g. maize in Southern Africa, tea in East Africa - is confirmed by several sources. It is also true that the low growth ascribed to agricultural production by World Bank estimates of the late 1980s is strongly influenced by the devaluation of African currencies.

Block also shows (but still using US prices) that on the basis of wheat equivalent data total factor productivity grew at the rate of 1.6 per annum in African agriculture during 1983-88 (1995, p.397) - in conventional value added terms agricultural total factor productivity is shown to decline by 3.1 per cent per annum during this period (Block, 1995, Table 3). Thus while the marginal **physical** productivity of labour increased over time its marginal **value** productivity fell by nearly one half over 1971-88 (p. 399). This is almost by definition an unsustainable situation.

Agriculture may have gained from devaluation in the sense that domestic prices of tradables (cash crop) rise and its sectoral terms of trade improved but they did so in the context of general macroeconomic depression. **Agricultural productivity growth cannot be sustained if the industrial sector is declining,** for it is an important supplier of agricultural inputs and a market for agricultural output. Agricultural research which "explains" a large proportion of the total factor productivity growth in Block's sample itself requires an industrial input.

Technical change must play a central role in supporting growth in productivity of African agriculture, and at least in the short to medium run, governments must continue to play a central role in supporting agricultural research in Africa. To date, the development and extension of maize hybrids in Kenya and Zimbabwe are among the few notable success stories in African agricultural research. This fact, along with the significance of expenditures for agricultural research in promoting growth in productivity suggests the possibility of large gains from future technical change. By international standards, there is much room for improvement. Reaping the benefits, however, requires patience, as the lag between investment and reward is lengthy - as long as a decade or more.

Public investment has been declining in both the industrial and the agricultural sectors. A revival of investment is necessary to **re-integrate the processes of industrial and agricultural development**. The sustainability of gains in agricultural productivity will depend critically on the demands placed on Africa's fragile natural resource base and especially on careful management of soils. Agricultural research is shown to contribute significantly to growth in productivity. But the future viability of such contributions will require increasing sensitivity to the environmental consequences of new technologies and farm-management practices.

In the semiarid tropical zones of **West Africa**, for example, the soils tend to be low in natural fertility, shallow and highly prone to erosion. Rainfall is highly variable, and population growth has pushed cultivation to increasingly marginal soils, reduced fallow periods, and led to increasing fragmentation of land holdings. In contrast, the humid and subhumid tropical zones of **Central Africa** have more plentiful rainfall; yet severe soil degradation poses a constraint on increased agricultural productivity. Moreover, as rainfall increases in this zone, agricultural potential decreases as a result of decreased solar radiation and soil fertility and greater problems of pests and diseases.

C. Attracting resource flows

It is the industrial sector which must provide the key inputs for arresting soil degradation and environmental depletion and for increasing agricultural productivity. The **agro-input industries** (agricultural machinery and fertilizers in particular) must be developed rapidly.

But Africa cannot conceivably be capable of producing the bulk of required agricultural inputs domestically. therefore the third major aim of the UNIDO programme must be increasing **international resource flows** of the type which enhance food security and agricultural productivity in Africa. Most obviously this requires improved international competitiveness.

Typically, 80 per cent of the **agricultural export earnings** of a SSA economy are derived from cash crops - cocoa, coffee, cotton, palm oil, tobacco, groundnuts, tea, sugar, sisal - the prices of which have been declining over the past two and a half decades. The average decline in commodity prices during the past decade and half has been over 40 percent (see Table 1).

Table 1. **Real world prices of major African export commodities, 1970-94**
(Percentage change in 1990 constant US$)

	1980-91	1970-94*
Coffee	-62	-32
Cocoa	-64	-52
Tea	-42	-59
Groundnut oil	-27	-38
Palm oil	-43	-55
Cotton	-42	-36
Tobacco	-32	-55
Rubber	-56	-36
Sugar	-78	-25
For comparison:		
Rice	-43	-42
Wheat	-47	-26
Maize	-40	-56

Source: Delgado, C., "Agricultural Diversification and Export Promotion in SSA". *Food Policy*, 1995, Vol. 20, p. 229.

* Estimate as of mid-October 1994. The World Bank (1994a) deflates the 1990 unit series.

Export diversification is thus an important necessity and policies to promote such diversification are necessarily commodity-specific. Export diversification requires investment in infrastructure, marketing and transportation.

African economies are "semi-open" because transport and other marketing costs (to and from ports) of bulky items - including food staples and major exportables - result in a doubling and tripling African port values, f.o.b., of exportables relative to their farm gate prices. Marketing costs also increase African consuming point retail prices of importables relative to their c.i.f. African port prices. These price mark-ups along the marketing channel are a function of structural factors, such as poor infrastructure, large distances, and the low volume of production; of direct policies, such as those regulating traders; and of linked sectoral policies, such as taxation of spare parts for trucks.

The **export policy** must thus emphasize manufactured and commodity exports and international and inter-regional trade creating policies. Exporting unprocessed cash crops (except perhaps tea) is often not a profitable venture and there has already been considerable shift of cropping patterns from e.g. coffee and cocoa to maize in some West African countries (Marter and Gordon, 1996).

In a **fully open economy**, the increased demand for food from smallholders with higher cash incomes generated by growth in export-crop productivity can always be met by increased food imports. However, in economies where very significant transfer costs apply to food imports, the economic sustainability of non-staple green revolutions depends on the response of domestic food production and marketing systems to increased food demands. In the semi-open economy without a comparative advantage in food exports, relative domestic food prices are of key strategic importance to competitiveness.

This is clearly different from the comparatively simple historical **Asian case**, where agricultural comparative advantage was in foodgrain production, and the items produced (rice and wheat) were tradables on the world market. Africa has its success stories in food production: Zimbabwe's maize growing area is an example of a staple food success story in Africa, driven by a pro-active strategy of promoting research, extension, agricultural services and access of smallholders to these services, not unlike the attention given to cash crops elsewhere (Rukini and Eicher, 1994).

Yet high transfer costs throughout Africa make it unlikely that even the success of maize in some areas will make one or two countries the breadbasket of the continent, in the sense of being major food exporters. Rather, there is a need for numerous and widespread **"mini-Green Revolutions"** in local food production, as a way of reliably and cost-effectively providing food where we know it will be most needed, now and more especially 20 years from now. Because Africa's agricultural environment is so diverse relative to the historical green revolution areas of Asia, technological progress in African food production will probably also require a much larger number of new varieties for a given production increase.

Delgado (1995) has argued that as far as agricultural products are concerned the main opportunities lie in **intra-regional trade** - facilitating the sale of maize from surplus to deficit regions which are specialized in the production of meat, fish, vegetables, fruit, handicrafts and services (p. 237). As far as **extra-regional trade** is concerned the future potential seems to lie in the development of market niches in textiles, wearing apparel, furniture and leather product categories (and also in pelagic fish and perhaps in fruit juice) rather than in the processing of the traditional cash crops. A UNIDO programme should therefore concentrate on the development of comparative advantage and the stimulation of world demand in these product categories.

Finally and most importantly the programme must focus on **stimulating international financial flows - especially ODA** - towards sectors and projects which enhance food security and stimulate sustainable agricultural productivity growth. ODA funds may be restructured so that they facilitate agro-related industrial development. The privatization initiative of the African governments provide many opportunities for the restructuring and rehabilitation of projects which can make a contribution towards increasing Africa's ability to meet her debt repayment obligation while stimulating agricultural productivity growth. ODA funds may also be used to recapitalize industrial finance institutions and capital markets and thus act as a bridge for the increased flow of private investment especially in the form of joint ventures towards sectors which can contribute to the achievement and maintenance of food security and the enhancement of sustainable agricultural productivity growth in Africa.

II. PRIORITY FOCUS ON POTENTIAL AREAS OF RELEVANCE TO AGRO-RELATED INDUSTRIAL DEVELOPMENT IN AFRICA

Keeping these objectives in mind the UNIDO programme should target the following commodity groups:[1]

1. Highest priority to be accorded to the processing of **maize and millet** to increase its acceptability in urban areas as substitutes for imported crops.

2. Disinvestment and retrenchment should be pursued in the **cocoa industry** and capital and labour resources should be shifted to food crops and horticultural products with export potential.

3. Rehabilitation, merger, amalgamation and rationalization of **sugar mills** including upgrading of technology and increased use of by-products especially bagasse and molasses.

4. Rehabilitation and modernization of existing plants and market related capacity expansion in units processing **dates, citrus, pineapples, dehydrated vegetables and fruit juice**. Support for expansion of fruit juice plants should be committed after a major study which measures capital intensity of this product group and suggests viable technologies for reducing it if necessary.

5. Revamping of **vegetable oil milling technology** through modernization of medium-sized plants and introduction of cheap manual and electrically powered machines to facilitate the establishment of small oil seed processing units in the countryside.

6. Increased domestic processing of **industrial fishing** - with Senegal and Namibia as models and promotion of processing of pelagic fishing exports.

7. Improvement of **riverine fishing technology,** including the provision of improved boating vessels and reduction of wastage in the inland fishing industry.

8. Development of an **animal feed industry** using by-products of other industries and crops - especially cassava.

9. Rapid development and upgrading of the **food packaging and canning industry**, entailing the development of a full-scale programme for a locally sourced food products-related packaging industry should be developed.

10. A two-tier **textile policy** targeting the doemstic and external markets is recommended :

- Given the low textile per capita consumption level and the availability of raw material and/or abundant labour in many African countries a domestic demand oriented efficient industry producing cheap coarse fabric and wearing material should be targeted. This should involve restructuring and rationalization of existing plants.

- The domestic demand oriented textile industry should be reorganized so as to provide greater scope for subcontracting between spinning, weaving and stitching units to maximize employment, investment and income distribution linkages.

- Promotion of textile machinery imports linked to the development of a domestic capacity for unpackaging the imported technology, particularly in Kenya, Nigeria, Morocco, Zimbabwe, Cameroon and Sudan.

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[1] The ratinale underlying the choice of these priority areas is presented in the paper, UNIDO, *A Survey of Agro-related Industrial Development Issues in Africa: Key Elements of a Viable Strategy*, 1997.

- The second tier of the textile strategy should be to create export competitiveness in a selected range of product groups. The export strategy should be constructed to synchronize with the sourcing strategy of major European and Asian retailer chains. Low cost African countries must seek to export standardized items of the type exported by Bangladesh and Sri Lanka. The Maghreb must be assisted to develop increased capacity in styled and designed products. Detailed research isrequired to identify product potential in specific markets but the following lines appear promising - blouses, cotton dresses, mens' knit shirts, mens' cotton shirts, T-shirts, trousers, skirts, overcoats, men and women's suits and knitted fabrics.

- Assistance to increase locally produced fibre and fabrics in OPT/CMT operation.

- Market development and investment sourcing of textile and wearing apparel operations from South and East Asia.

- Market development of textile and clothing exports from Africa targeted at the Afro-American community in the United States.

12. Technical assistance for leather processing units - continuation and extension of the UNIDO Leather Programme in Southern and Eastern Africa. Assistance to be focused on improvement of collecting, reducing of waste requirements, upgrading of technology, better affluent treatment and enhancement of product quality.

- Recapitalization of potentially viable leather processing units. Attempts should focus on attracting Spanish companies to establish joint ventures and undertake local sourcing in North Africa. South African firms can also be important investment partners.

- The leather products industry should be assisted to develop an export orientation. Key products may include leather clothing and gloves, crocodile and ostrich leather products, camel leather products, sportswear and low cost shoes targeted at lower income groups in Europe and West Asia.

13. Identification of export opportunities for **furniture and wood products** in specific markets and if these prove substantial support for technological upgrading and product quality improvement in these branches.

The production of wood products for the construction industry is particularly important for the extended use of wooden bridges in Africa.

14. Supporting **agricultural machinery** production to serve existing effective demand of small holders and for assessing effective demand.

- Support for establishment of farmer cooperatives for purchase and distribution of agricultural machinery and equipment. Extension of credit facilities to both producers and purchasers of such equipment.

- Development of facilities to monitor inventory application, manufacture and testing of agricultural machinery, particularly in regions characterized by food availability vulnerabilities.

- Assistance in procurement of agricultural machinery and the establishment of national focal points for agricultural engineering and technology procurement.

- Stimulation of public and private sector interest for major irrigation, drainage and water management systems for enhancing food security and raising agricultural productivity in particularly vulnerable areas. An attempt must be made to bring together medium sized developed country firms producing agricultural machinery and African firms capable of manufacturing components of agricultural machinery and drainage systems and of providing efficient repair and maintenance services and of adoption of technology to suit the needs of the African ecosystem.

- Establishment of medium sized units - costing roughly between $100,000 to $500,000 and capable of producing up to 7000 units of the following equipment per year - low lift pumps for irrigation, simple diesel engines, powered tillage equipments for fertilizer spraying equipment sowing equipment and trailers. They should be encouraged to use subcontracting arrangements extensively to upgrade production techniques in traditional workshops.

- Estimation of construction material requirements of projects essential for irrigation development and for increasing access of vulnerable groups and areas to food supplies through rehabilitation and construction of roads. Use of ODA funds to revitalize building material companies that can be dedicated to such projects and also use of such funds to facilitate acquisition of construction equipment and technology. An attempt should be made to develop a long-term relationship between suppliers of such equipment and the local construction materials industry. This might lead to joint ventures or the establishment of subsidiaries by international companies in this sector in some African countries.

15. Estimation of **fertilizer** requirements for enhancing productivity in grain and root crop production in vulnerable areas. Estimation of required level of (specially phosphate) fertilizers use to offset soil deterioration.

- Estimation of complimentary input requirements - machinery, credit, application information, distributional network - to stimulate fertilizer demand in target areas.

- Development of rehabilitation plans for selected fertilizer companies to increase capacity utilization rates, economize on input (specially energy) cost modernization of equipment, management and financial restructuring etc. Such plans may be directly linked to debt restructuring schemes as mechanisms for enhancing Africa's ability to service her debt obligation.

- ODA funds may also be used to stimulate foreign investment in the form of buy , operate and tranfer (BOT), buy, operate and own (BOO), debt equity swaps and transfer of technology arrangements to the fertilizer plants that are being revitalized.

- Reorganization of fertilizer aid programmes and creation of distributional networks which foster the growth of formulation and mixing units in African countries.

- Support for the organization of fertilizer purchasing credit schemes in selected areas. Scheme for the regional coordination of fertilizer purchase policy may also be encouraged.

- Support for the establishment of low cost mini fertilizer plants where appropriate.

III. INTEGRATED PROGRAMME FRAMEWORK

A. Programme objectives and mechanisms

As noted earlier, the three principal objectives of the programme are:

(a) Ensuring and maintaining food security especially in vulnerable areas and among marginalized rural and urban groups.

(b) Increasing **agricultural productivity**, especially of food crops, generation of non-farm rural income and processing of agricultural output.

(c) Increasing both domestic and international **resource flows** towards agro-related industries through:
   (1) mobilization of domestic savings, enhancing financial intermediation and identification of investment opportunities;

(2) enhancing export competitiveness and the development of market niches; and
(3) increasing flow of ODA and associated FDI flows to agro-related industrial projects.

Keeping these objectives in view of the following principles are recommended:

1. The programme should be formalized and overseen by those involved in agro-industrial development in Africa. UNIDO could establish an **Agro-related Industrial Development Committee**, consisting of:
   (a) representatives of African business in agro-related industries;
   (b) representatives of foreign investors;
   (c) representatitives of major retailing and marketing organizations;
   (d) NGOs involved in environmental and bio-diversity protection work and in channelling micro loans to those engaged in informal manufacturing activities; and
   (e) representatives of research institutions.

   The Committee should preferably be led by an internationally reputed industrialist and should be responsible for:
   (a) formalizing a **six-month rolling programme** identifying operational targets;
   (b) overseeing the programme and modifying it in the light of performance as well as changing international circumstances; and
   (c) mobilizing financial resources for the programme.

   An office could be established within UNIDO programme to provide secretarial assistance to the Committee and ensure the execution of the six-month programme approved by the Committee. It is to be emphasized that the Committee is seen as **an executive, not as an advisory body**.

2. As the programme is concerned with ensuring food security and enhancing productivity its' focus should be on **areas, communities and products**. The programme should identify vulnerable areas and communities, often straddling international frontiers which are most vulnerable, fragile and marginalized. Programme inputs should be directly targeted at these vulnerable areas and communities. Similarly products with the greatest productivity potential and with the greatest income and employment enhancement impact on the vulnerable areas and communities should be targeted. The programme should be concerned with removing constraints on the production and marketing systems which inhibit the production and consumption of these products so as to facilitate their rapid growth, increased valo·ization and widespread distribution.

3. The programme should place primary emphasis on **institution building** in agro-related industry. Africa's crisis is largely a crisis of institutional decay, particularly at the micro and macro levels. Institutionalizing productivity growth in a sustainable manner requires the creation and maintenance of effective networks of intermediation and communication between the traditional institutions rooted in Africa's social-cultural heritage and the modern institutions that have emerged in the past colonial era. Institution building is a complex long term and difficult task requiring multi-faceted policy initiatives. The programme must be concerned to strengthen existing institutional networks and create new ones in three crucial segments of agro-related industrial development:

   (a) Production: especially rationalization of the corporate sector, merger, amalgamation and rehabilitation and subcontracting linkages;

   (b) Finance: especially mobilization of domestic saving, financial intermediation and 'deepening' and micro-credit schemes; and

   (c) Technology transfer: especially acquisition and diffusion of marketing and financial management and communication skills through rural technology centres.

4. The programme should be premised on the fact that the development of **Africa's agro-related industries is of global benefit** - effective utilization of Africa's vast natural and human resources

enhances global welfare (not just the welfare of Africans). Environmental degradation and the loss of bio-diversity in Africa will have serious global consequences. Strengthening global commitment to ensure the sustainability of agro-related industrial development in Africa at the present stage depends largely on increasing and restructuring ODA flows to that continent. This is particularly important in view of Africa's debt crisis. Debt forgiveness and rescheduling are ineffective responses as the experience of the past decade has illustrated. Debt restructuring must be focused on increasing Africa's ability to meet debt obligations. This means that they must make a direct contribution to the enhancement of productivity growth. The October 1996 debt accord may seem to be a small step in the right direction but by tying debt restructuring to macro-economic performance (as reflected in IMF conditionality compliance) it fails to create links between debt restructuring and economic performance at the micro level[2]. Debt restructuring should be seen as an instrument for the rehabilitation of projects, relief of constraints on productivity growth and above all as a means for facilitating private capital inflows into Africa. The UNIDO programme may identify uses of ODA funds which increase Africa's capacity to repay external debt by increasing export receipts and enhancing productivity, and by creating conditions which make foreign investment in African agro-related industry an attractive and lucrative proposition.

B. Programme inputs

(i) Integrated research support for operational activities

- The development of a **simulation sector model** for (a) the manufacturing sector and (b) agro-related industries allowing policy makers to simulate consequences of different policy and environmental scenarios.

- **Industrial surveys of product groups** that are essential for enhancing food security, increasing agricultural productivity and attracting the inflow of foreign resources to Africa. Such products may include , for example, course grains, fish, vegetable products, fertilizers , agricultural machinery and equipment, low cost yarn, etc.

- **Industrial surveys** for agro-related industrial development in Africa with a focus on enhancing capacity building and competitiveness based on potential comparative advantages.

- **Surveys of industrial investment and trade opportunities** in selected products including *inter alia*:

  - Identification of constraints on exports of selected standardized and designed and styled fabrics and clothing to specific markets.

  - Identification of constraints on exports of (a) fruit juice; (b) selected horticultural products; (c) pelagic fish; (d) leather products; (e) handicrafts and (f) wood products to specific markets.

  - Study of South Africa's trade in manufacturing products with North Africa and SSA.

  - Study of South African investment in agro-related industries in SSA.

- Studies of micro enterprise development and **financing,** and of their horizontal and vertical integration with the formal enterprise system.

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[2] Moreover only three African countries - Ethiopia, Guinea Bissau and Uganda are likely to benefit from the accord during 1997-2000.

- Studies to determine the **industrial input needs** of programmes for promoting food security, environmental protection and preservation of bio-diversity in specific areas.

- Studies for promoting **regional cooperation** in informatics, marketing, fertilizer procurement and inter-firm cooperation.

- The development of a **focal point** for collecting and disseminating information and research on agro-related industrial development in Africa.

(ii) Technical Assistance

It is important that the technical assistance builds upon **the UNIDO success stories in food processing, leather, wood, textiles, agricultural machinery, biomass energy, essential oils, natural rubber, agricultural application of industrial minerals and pollution control.** (A summary of success stories is provided in Appendix A.) These programmes should be carefully assessed, improved, deepened, restructured and marketed vigorously within the donor community.

- The enhanced **technical assistance programme** should be based upon the identification of:

  - areas and communities most vulnerable to food shortage shocks and supply disruption;
  - those products whose production growth is most likely to reduce food insecurity of vulnerable areas and communities; and
  - products in which African countries have clear dynamic comparative advantages and in which market niches can be developed.

- The technical assistance programme should concentrate on **removing constraints on production and distribution** of products identified as priority areas in Chapter II. Broadly, the programme approach developed by UNIDO is useful. The programme approach was formulated in response to the widely perceived need for an increased impact of technical assistance projects on the industrial development of developing countries. The application of the programme approach to project design makes it possible to produce an integrated development programme that comprises a package of technical assistance and investment projects and policy advice to promote the harmonious balanced development of all components of an industrial system. The industrial system should be conceived in terms of product groups. Indicative programmes represent a cost-effective programming method. By applying the programme approach to a group of countries having similar patterns of product specialization, it is possible to prepare an analysis of the specified product group, strategies for its development, technical assistance and investment requirements and policy advice that can form the basis for development programmes for all the countries in the group.

- The technical assistance programme should be focused on the need to develop **sustainable production input-output and marketing chains** in specified product groups and areas. The technical assistance programme must assess the institutional capacity for assimilating technological know-how and know-why in specific product groups and of weaknesses in marketing chains limiting export success.

- Technical assistance must provide support on **procurement and marketing** opportunities and **trade and international investment** sourcing opportunities in specific product groups and markets.

- Enterprise development, specially of **medium, small and micro enterprises,** should be an important concern of the technical assistance programme. Enterprise development is an important means to raise income and reduce food insecurity in targeted areas. Boomgard *et al.* (1992) have argued that focusing on commodity specific sub-sectors allows an identification of input and output linkages of local firms. This type of analysis begins with the selection of a product group in which

small enterprises are important.[3] The analyst must then identify the principal functions, participants and channels of interaction within these enterprise systems. Together, this matrix of functions and participants delineates the principal channels through which raw materials are produced, transformed and distributed to final consumers.

After outlining the product map, the analyst will need to identify overlays of special interest. In some cases, it also becomes important to identify employment, sales, product volume, or inventory holdings throughout the system. Other, less quantitative overlays can be included; tracing the variety of contract relationships in different channels or the sources of trade finance are examples. Basic budgets - which trace price markups, costs and value added throughout the subsector - demand considerably more time and ingenuity than do the other common overlays. But they open up broad new vistas. Not only do they allow an assessment of current competitive pressures, they likewise make it possible to assess the impact of macroeconomic changes -in tariffs, taxes, exchange rates, wage rates, agricultural income and aggregate demand - on the profitability and growth of small firms. By interviewing subsector participants and key informants, and supplementing with selective and focused data collection, it has generally been possible to gain a basic understanding of subsector dynamics in a relatively short time, often as short as two to four weeks.

Three vantage points have proven especially valuable in viewing subsector dynamics. First, firms operating at system nodes - usually large wholesalers or input suppliers - are often well placed to observe changes in the system. Because they are few in number, they register most volume and quantity changes among channels. Indeed, they themselves are often the forces driving observed change. Second, enterprise budgets reveal cost structures and sources of competitiveness. They prove central to forecasting the rise and fall of alternative production/distribution channels. Third, consumption studies can be invaluable as well as offering insights into future demand patterns. Such analysis can identify opportunities for focusing support at product system nodes where they can be most cost effective. An alternative approach pioneered by Schmidt (1992) emphasises the need to concentrate on small and micro enterprise clusters and to provide assistance in such a way that horizontal integration increases. This increases production resilience to external shocks and can contribute to technological upgrading.

Enterprise upgrading can also be promoted by increasing enterprise competitiveness through a modified version of the **"incubator"** model popular in the United States. A traditional business incubator provides space as well as business and technical support services to small start-up firms. Incubator management develops a network of pre-screened contacts within the public and private business support and consulting communities and assists tenants to access these networks in ways that meet their specific needs. This support has been shown to reduce the time required to launch a business and to increase significantly the prospects for success of a new enterprise. As tenant firms grow and begin to achieve a stable financial footing and a market presence, they "graduate" from the facility and move into their own location.

A new approach developed by North Western University (Wood, 1996) significantly alters the incubator concept to produce a new mechanism. This plan for focusing and delivering business support services to small businesses and entrepreneurs can be thought of as a **second generation incubator**. Conventional incubators tend to have a local focus, drawing tenants from the immediate community. Most are subsidized with public funds and have few direct links with existing businesses beyond those that are potential service providers for tenants. Perhaps most importantly, conventional incubators are "reactive" in that they support entrepreneurs and new businesses that have already developed their product or technology ideas. The new approach serves this purpose as well, but also develops new business projects and actively seeks private entrepreneurs and businesses to implement them. The development system's primary purpose is

[3] For a systems approach, see *UNIDO Systems Approach to Analysing Agro-related Industrial Development in Africa*, 19 February 1997.

to serve as a proactive outreach centre to promote the development of successful, market-oriented, value-added firms.

- In developing and organizing business support capabilities, the emphasis must be to combine public and private elements to develop a system that will gain the respect and confidence of all participants in the development process, including policy makers, bureaucracies, banks, large firms - domestic and foreign - and small businesses. Only by integrating all of these elements can sustained economic and social development be achieved.

(iii) Industrial finance

- The provision of long-term equity and loan finance to major industrial concerns has been seriously disrupted by the financial crisis of many development finance institutions in the 1960s. A resurrection of the DFIs will serve no useful purpose. Instead it makes much more sense to mobilize long-term resources through the commercial banking systems by developing institutional links on the one hand with financial intermediaries such as insurance companies and pension funds and on the other with the industrial enterprises themselves. The commercial banks should be encouraged to evolve as "universal" banking institutions, along the lines of the German model, capable of providing a wide range of tailor-made financial services to suit the needs of individual clients. Specifically suport should be provided for:

- Development of long-term saving schemes, issuance of commercial paper and discounting operations
  - new facilities for the placement of long-term trends by pension funds and insurance companies
  - possibility of banks' specialization in some segments of the agro-related industrial branches (e.g. textiles or fertilizers)
  - development of a closer institutionalized relationship with clients through the presence of banks on the boards of industrial sector, public limited companies and through equity financing
  - possibility of establishing specialized operations - e.g. leasing companies or venture capital operations as joint ventures in association with foreign financial institutions.

- The development of industrial financing systems also depends crucially upon encouraging the growth of capital markets and their integration with money markets in Africa. In Egypt, the Maghreb, Zimbabwe and some other African countries the capital markets have done surprisingly well during 1996. There is scope for expanding both equity and bond operations and for creating quasi equity instruments (term finance certificates, corporate bonds, etc.) to promote industrial financing. The development of the capital markets creates many opportunities for inter-enterprise cooperation at the regional level and can pave the way for the harmonization of monetary and eventually fiscal and investment policies at the regional and subregional level. The impending creation of a single European currency - and its consequence for the stability of CFA type arrangements - have implications for the development of the industrial financing system which UNIDO should seek to influence. A strengthening of the regional role of the South African Rand, for example, depends upon a more active South African presence in a regional capital market.

- The industrial financing system could also be supported by the introduction of Islamic financing modes and instruments. Islamic banks have been operating for over two decades in several Asian, African and European countries (one of the largest Dar al Maal al Islami, DMI, is based in Luxembourg) and Islamic financing instruments such as modaraba (fund management), musharika (profit sharing) and ijara (leasing) may be particularly suited for the extension of both long term and working capital financing to industry. Development of Islamic financing in African countries can also be the basis for attracting funds from the Gulf States, Pakistan and Malaysia and provide the basis for joint financial ventures with these countries.

- The most important obstacle to a revitalization of the industrial financing system is the large injection in the loan portfolio of the major African financial institutions reflecting project "sickness". Project sickness has been defined in several ways depending upon the context of usage. The first step towards a successful rehabilitation plan would therefore be that agencies

involved in the rehabilitation process, particulary the financial institutions, agree on the definition of the term "sickness". A working definition of sickness could be the "continued poor performance of a project against realistically determined expectations that warranted the setting up of the project in the first place".

Causes of sickness may be classified as internal --inappropriate technology, inappropriate plant size, management failure --or external - recessional, frequent unpredictable change in input-output price structures, infrastructural breakdown etc.

The internal-external categorization is crucial from the perspective of both the sponsor and the financier. Sponsors and financiers can devise strategies for overcoming internal constraints on profitability but are relatively powerless in the face of external constraints. Large financial institutions may, however, have significant influence in shaping the macroeconomic environment. Nevertheless, the primary focus of financing policy must be on relieving internal constraints.

The effectiveness of such a policy depends crucially upon the existence of a favourable macro and sectoral environment. This cannot be pre-supposed and financial institutions should seek to situate their rehabilitation packages taking account macro-economic constraints and opportunities.

Government on the other hand, has greater (though necessarily limited) ability to reduce macroeconomic constraints on the financial viability of industrial units.

Project rehabilitation is an important need in the fruit and vegetable processing, sugar, textile and fertilizer industries. (The role of major players in project rehabilitation is presented in Appendix B.) Rehabilitation should be based on cooperation between government and local and foreign capital. It should be the centrepiece of the national privatization plans, the primary concern of which should be to rationalize the industrial structure through closures, mergers, amalgamation, recapitalization and balancing. Foreign capital is a vitally important input -- indeed industrial rehabilitation in Africa is inconceivable without strong foreign support. ODA funds should be used in rehabilitation projects as this leads the way towards increasing Africa's ability to meet its external debt obligation. UNIDO had in the 1980s developed plans for the rehabilitation of African textiles and food manufacturing subsectors. These studies could be deepened by focusing on two crucial requirements:

- What are the financial requirements of rehabilitating a given number of plants in the agro-related industrial sector of particular countries?
- How can a viable financing package be put together to raise these resources? Who can be induced to participate? What financing mechanisms are appropriate, etc.

As the Japanese example of the early 1990s has shown, rehabilitation of projects, restructuring and recapitalization of national financial institutions are two sides of the same coin.

Micro enterprise financing should also be an important element in the revitalization of agro-related industries. It can play a crucial role in increasing income, employment, saving and investment at the grassroots level. Credit is often the most important constraint on the expansion of micro enterprises.

In the 1994 paper, "Maximizing the Outreach of Microenterprise Finance: The Emerging Lessons of Successful Programmes", Cristen, Rhyne and Vogel studied eleven leading micro enterprise financial institutions. They found that some of the eleven continued to be dependent on grants and subsidized loans, while a few had achieved a state in which they could continue operations on a unsubsidized basis. The overall picture was one of a growing trend towards sustainability that holds great promise for the rapid growth of microcredit programmes in developing countries. This study, combined with the well-known record of achievement and expansion of individual programmes, proves that microcredit institutions in developing countries have the potential to become profitable institutions, capable of competing for investment funds in the financial marketplace.

One of the important services that many microcredit programmes offer their clients - both borrowers and non-borrowers - is a safe place to put their savings. Empirical and anecdotal evaluations of many microcredit programmes conclusively report that, from the client's perspective, learning to save, and having a safe place to keep savings, is one of the principal benefits of the programme.

Recognizing the important role that microcredit can play in reducing the vulnerability of marginalized people the World Bank sponsored Consultative Group to Assist the Poorest (CGAP) convened a microcredit summit in February 1997 with the aim of rasing $21.6 billion between 1996 to 2005. Several international bodies - including UN agencies - have supported and joined this initiative. Microenterprise financing aimed at promoting industrial enterprises in agro-related branches will of course have its distinctive features. The Grameen Bank model where reliance is placed on NGO networks to deliver credit in the range of $125 to $250 per year to landless women is particularly inappropriate. It is suggested that

- A microcredit financing scheme should usually be part of product specific technical assistance programmes.
- The attempt should be to create financing intermediation processes which relate productive activity at the grassroot level to the provision of credit by major formal sector financial institutions.
- A large commercial bank should be persuaded to fund an unorganized sector financing scheme through the establishment of unorganized sector financing (USF) cells in (say) twenty localities where the development of a particular agro-related product system is targeted.
- Each USF cell should be manned by a full-time credit officer responsible for:
  (1) Identification of financiable projects
  (2) Monitoring of use of finances and of progress of the financed projects
  (3) Recovery of loans
  (4) Development of horizontal linkages between financed projects and vertical linkages with large firms.
- Loans should be extended for both long-term investments and working capital purposes. The size of the loan should be determined by investment and working capital requirements of financed enterprises. In a similar scheme for Pakistan unorganized sector enterprises loans ranging from Rs25,000 to Rs50,000 (roughly equivalent to $800 to $1,600 in 1993 prices) were found to be effective. Optimum loan size should be determined for different product groups. But loans lower than $1,000 would not serve the purpose of upgrading the enterprise.
- Loans should be commercially priced (cost of funds plus administrative costs) currently unlikely to be below 20 per cent per annum in many developing countries. Adjustments should be frequent - monthly or quarterly.
- Loans should be restricted to existing successful firms seeking expansion or modernization.
- Loans should be extended against personal guarantees. Collateral requirements - usually unenforceable in most areas - should be dispersed with
- NGO intervention is not necessary - and often counterproductive - in such schemes.
- Machinery leasing is a particularly effective instrument as are profit sharing arrangements (hence the appropriatness of Islamic frinancing modes).
- The key figure in the scheme is the full time special credit officer at the unorganized sector cell. He should:

  (1) be from the local community
  (2) be well paid in relative terms
  (3) be provided with adequate and frequent training
  (4) have adequate transport (motorbike).

  The experience is that such an officer can handle about 300 projects annually (loan portfolio roughly $300,000) and ensure near 100 per cent recovery.

- The programme can become commercially viable over a 3-year period at which time a revolving fund should be established.

(iv) Negotiations

In Africa's response to the globalization challenge,[4] effective **policy coordination** can pay rich dividends. Policy coordination is an essential element in the processes of good governance and its institutionalization is an important prerequisite for successful policy conception, implementation and compliance monitoring.

There is an emerging consensus in the literature that better not less governance is required to accelerate the pace of development in Africa. As far as industrial policy is concerned, this requires among other things the establishment of mechanisms and institutions which can structure a sustained **policy dialogue between government and industry**. The participation of the private sector in all aspects of policy formulation particularly at the sectoral level should be institutionalized. As the East Asian example has so vividly shown, a crucial element in increasing the effectiveness of industrial policy has been the success achieved in creating and sustaining a consensus among public and private decision makers on policy objectives and policy implementation in specific sectors. The existence of this consensus has increased the legitimacy of the governments' compliance monitoring efforts. Such policy coordination makes it possible to develop an incentive cum disciplinary system for rewarding and penalizing firms on the basis of their performance - a system which because it has been evolved through a process of negotiation with the private sector enjoys wide social acceptance.

Policy coordination between governments is also assuming increased importance. Globalization has not deterred the growth of regional policy integration - today we are less than three years away from what will in all probability be a major advance in monetary policy integration in Europe. Regional integration has also made progress in South East Asia and in Central and North America. Perhaps the adoption of a functionalist approach - whereby, for example, governments provide the institutional structures for facilitating policy coordination among private firms - can reinvigorate the process of regional integration in parts of Africa. Regional coordination is in any case essential to avoid the adoption of **"beggar my neighbour"** policies for attracting foreign investment.

Africa is increasingly seen by enlightened economic interest groups as the earth's last major resource frontier. International policy coordination is required to ensure that the exploitation of African resources does not lead to widespread **environmental depletion** and does not threaten biodiversity. Environmental and industrial policy issues are inextricably linked as are issues related to the promotion of food security and safety and the elimination of mass malnutrition in Africa. A neutral international forum such as UNIDO can provide the proper institutional setting for bringing together industrialists, financiers, government policy makers from both industrialized and African countries, environmentalists, technologists and scientific research workers to develop a protracted and continuing policy dialogue premised on the acceptance of the fact that Africa's industrial development is a global concern. UNIDO should make an attempt to institutionalize this policy dialogue.

The UNIDO programme should provide **institutional mechanisms** for:

(a) continuing negotiation between local and foreign firms and financiers in specific product markets;

(b) continuing policy dialogue at the regional level between government agencies involved in the regulation of trade and investment in specific product markets;

(c) continuing policy dialogue between African governments, firms and donor agencies on project rehabilitation, environmental concerns, food security, protection of biodiversity to enhance Africa's capacity to service her debt and enhance the sustainability of specific investment initiatives.

Negotiation mechanisms should not be general and all purpose but related to specific initiatives taken in various product groups and areas.

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[4] For in-depth analyses of the challenges and opportunities of globalization, see UNIDO, *The Globalization of Industry: Implications for Developing Countries Beyond 2000*, December 1997.

IV. CONCLUSION: DUAL APPROACH TO A PROGRAMME FRAMEWORK

The total package: Version A - Product and commodity focus

1. **Selection of products or commodities:**

   (i) Estimate the relative importance of the product/commodity for achievement and maintenance of food security, agricultural productivity and resource flows in a country or group of countries;

   (ii) Identify major ongoing or pipeline projects/proposals in this product area.

   (iii) Identify constraints on expansion or launch of the projects in association with e.g. National Industrial Business Councils.

2. **Identify:**

   (i) Input structure: cost per unit of production - water, machinery, fertilizer, labour, finance, domestic inputs;

   (ii) Demand - local, national, regional, world markets;

   (iii) Structure of agricultural production - land tenure, asset distribution among producers, technology;

   (iv) Structure of manufacturing production and degree of processing;

   (v) Structure of distribution - marketing, transportation, networking between producers and traders - in area, country or region and links to foreign market. Extent, stages and location of processing;

   (vi) Structure of credit - volume, cost structure, delivery and recovery systems - at area, national, regional levels.

3. **Targets** - Production, investment, employment, and exports over (i) one year, (ii) three years for existing and pipeline projects/proposals outlined in 1(ii).

4. **Strategies:**

   (i) Estimate cost of increasing production by targeted level in terms of:
   - irrigation;
   - mechanization;
   - fertilizer;
   - labour;
   - transportation;
   - processing.

   (ii) Suggest institutional changes for increasing efficiency of:
   - land tenure systems;
   - markets;

- extent of processing;
- access to regional and world markets;
- acquisition and diffusion of technology;
- delivery and recovery of credit and estimate costs of these changes.

(iii) Identify source of finance for investment to achieve both targeted production and desired institutional changes. This should include:

- local resource mobilization;
- investment by major national firms;
- micro and small enterprise financing schemes;
- local/provincial governments;
- national credit institutions;
- bilateral/multilateral agencies and ODA dispersers;
- TNCs and international banks;
- NGOs, especially environmental protection groups.

(iv) Negotiations with the above-mentioned agencies leading to financial commitments and initiation of disbursement before the launching of a programme.

The total package: Version B - Areas and community focus

1. **Select a target rural and/or urban community (for example a least developed region or community area within a country):**
   (i) Estimate size in population and rate of growth;
   (ii) Per capita income of the group and rate of growth.
   (iii) Identifying existing or pipeline projects aimed at this community.

2. **Identify:**
   (i) Income earning patterns;
   (ii) Access to assets;
   (iii) Education skills and experience related to crafts;
   (iv) Age composition;
   (v) Household budgets and expenditure patterns;
   (vi) Patterns of networking with formal economy.

3. **Targets** - Establish target for increase in per capita income and employment over (i) one year, (ii) three years and estimate costs of achieving targets by expanding/launching existing and onpoing projects.

4. **Strategies - Develop:**
   (i) Employment schemes in formal enterprises for increased absorbtion of disadvantaged groups ;
   (ii) Financing schemes for increasing self-employment by disadvantaged groups;
   (iii) Schemes for increasing sub-contracting between:

- formal and unorganized sector enterprises;
- horizontal integration between small and mixed enterprises (clustering) (enterprise incubation);

(iv) Schemes for skill upgrading (both technical and entrepreneurial);

(v) Schemes for integrating formal and informal financial markets and increasing flow of industrial financing funds;

(vi) Identify sources of financing for investment to achieve targeted levels of income and employment and associated institutional changes. These should include:

- local recourse mobilization;
- investment by major national firms;
- small/micro enterprise schemes to be operated by major financial institutions;
- local/provincial/federal governments;
- multilateral/bilateral agencies and ODA dispensers;
- NGOs.

(vii) Negotiation with above-mentioned agencies leading to financial commitments and initiation of disbursement before commencement of programmes.

Versions A and B of the proposed total package approach, which can be pursued simultaneously, will entail UNIDO's involvement in a series of operational and supporting activities which are identified in the following matrix. The matrix identifies UNIDO's role in each operational area and the agencies with which UNIDO can fruitfully associate for undertaking these activities.

Matrix of proposed UNIDO activities for the *Alliance for Africa's Industrialization*

Action	Purpose	Associated agencies	UNIDO's role
1. Conduct surveys to identify sectors and products with greatest potential and maximum linkages	Capacity building and linking industry with agriculture	Private sector entrepreneurs, foreign investors and governments	Executing agency
2. Undertake market surveys to determine export potential	Capacity building	Entrepreneurs, marketing firms in developed countries, governments	Intermediary and facilitator
3. Develop industrial strategies	Capacity building, linking agriculture with industry, formal-informal linkages	Governments	Advisory role
4. Analysis of environmental impact of projects and strategies	Capacity building and agro-industrial linkages	Governments, industrial sector entrepreneurs, foreign investors, environmental groups in developed countries, eco NGOs in SSA	Research and advisory role (technical assistance)
5. Proposals for increasing productivity of product groups	Capacity building	Private sector and government	Technical assistance
6. Advice on technology acquisition and transfer	Capacity building, agro industrial and formal and informal sector linkages	Firms, TNCs, technology advisory and research groups in developed countries and governments	Technical assistance and negotiating facilitator
7. Advice on product quality	Capacity building	Firms and governments	Technical assistance
8. Provision of branch specific information (on costs and demand)	Capacity building	Firms and governments	Advisory role
9. Facilitating negotiation for inter-enterprise collaboration	Agro-industry and formal-informal sector linkages	Foreign investors, firms in Africa, governments	Facilitator
10. Procedure for DFI security etc.	Capacity building	Governments, foreign investors	Advisory, facilitator of negotiations
11. Support for enterprise clustering	Formal-informal sector linkages	SMEs and domestic firms, foreign investors	Advisory, technical assistance, and negotiation facilitator
12. Rationalization of industrial structure	Capacity building and enterprise	Governments, donor agencies, private sector	Advisory, technical assistance

(continued)

Matrix of proposed UNIDO activities (Continued)

Action	Purpose	Associated agencies	UNIDO's role
13. Strengthening the managerial resources of enterprises	Capacity building, formal-informal sector linkages	Domestic firms specially SMEs and microenterprises	Technical assistance
14. Development of communication networks between governments and firms	Capacity building	Governments, firms, foreign investors	Technical assistance
15. Development of policy implementation monitoring procedures	Capacity building	Governments	Advisory, intermediary facilitator and technical assistance
16. Devising schemes for resource mobilization	Capacity building and agro industrial linkage	Banks, DFIs, firms, foreign investors and financiers	Technical assistance and facilitator of negotiation between financiers, industrialists and government
17. Development of rehabilitation and merger schemes	Capacity building	Banks, DFIs, foreign financiers and manufacturing firm	Facilitation of negotiation and research and policy advice
18. Development of capital markets in Africa	Capacity building	Governments, firms and foreign investors	Policy advice and facilitation of negotiations
19. Micro enterprise financing	Formal-informal sector linkages	Firms, NGOs, government	Technical assistance
20. Promotion of rural industry and non-farm employment	Agro industrial linkages	SMEs and microenterprises and government, NGOs and multilateral and bilateral donors	Technical assistance

APPENDIX A

UNIDO's EXISTING CONTRIBUTION TO AGRO-INDUSTRIAL DEVELOPMENT IN AFRICA[1]

A. Success stories

Over the years, UNIDO has developed special technical expertise in key areas such as leather, textiles and wood industries; food processing; agricultural machinery and implements; environment; fertilizer production; and biotechnology. This wealth of experience and expertise, complemented by more general cross-sectoral expertise, e.g. on SME development and investment promotion, could be pooled in an integrated manner to enhance UNIDO's contribution to the development of the agro-industrial production system in Africa.

(a) Agro-processing

The regional **leather** programme for Africa is being implemented in Ethiopia, Kenya, Malawi Sudan, Tanzania, Uganda, Zambia and Zimbabwe. The programme involves technical assistance, investment activities, technology improvement, information, pollution control, leather products development and promotion, strengthening SMEs, training and quality control in respect of hides and skins (tanneries), footwear and leather and leather products. The programme has helped to increase the value-added of hides and skins in the countries concerned and to create a Revolving Fund Operation (RFO), leather industry associations and the COMESA Leather and Leather Products Institute in Ethiopia. Furthermore, a leather goods manufacturing unit has been established in Kenya; a new tannery set up in Kenya; shoes manufacturing investment projects are being promoted between South Africa and East African countries; and UNIDO publications issued on simulated leather, component manufacturing, technical information sources, acceptable quality of leather and leather products and the world leather industry.

An analysis of the **fish** industrial systems carried out in selected West African countries (Senegal, the Gambia, Guinea, Togo, Sierra Leone, Ghana, Angola and Cape Verde) led to the formulation of integrated programmes. Follow-up activities (particularly in Ghana, Togo and Senegal) have taken the fish industries nearer to their objective, which is compliance of the fish products with the quality requirements of the international market.

UNIDO has implemented a number of national projects providing direct technical assistance in manufactured **wood products** and structures (Cameroon, Central African Republic, Kenya, Madagascar, Côte d'Ivoire, Angola, Senegal) and has participated in regional projects executed by FAO based in Addis Ababa and Lusaka (PTA countries). These projects and technical training courses on production planning and control, machinery selection and wood technology plus the use of timber in construction, have also served to build up a close familiarity with the needs and conditions of this subsector within the Secretariat. These activities have led to initiating the formulation of integrated programmes in Ghana and, under consideration, in the nine member countries of the African Timber Organization in collaboration with FAO and ITC, and to proposing a programme to develop and harmonize structural design codes and standards as exist in Europe and are proposed for Latin America.

With regard to the **textile** industry, the Jua Kali Textile Project developed and executed by UNIDO in Kenya addresses women issues of employment and income generation in the informal and small-scale Jua Kali sectors through the provision of innovative training to women entrepreneurs, covering both technical and business skills. It also covers consultancy services for trouble shooting in production or management. The unique contribution of UNIDO involved the establishment of two training centres in Kenya resulting in the training of 380 business women; the creation of 853 new jobs; greater access to credit; improvement in product quality; development of new products; increased sales; and access to export markets. The World

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[1] See UNIDO Concept Paper on Thematic Priority 7: *Africa and the Least Developed Countries: Linking Industry with Agriculture*, 22 February 1996.

Bank is now building on the positive results of the project to expand the programme in Kenya. UNIDO is also replicating the experience in the development and implementation of similar projects in Tanzania.

(b) Agricultural equipment

Over the years, UNIDO has developed special expertise in assisting African countries in the identification, formulation and implementation of technical assistance and investment projects related to the design, manufacture and maintenance of agricultural machinery, tools and implements. A regional project has been developed and implemented leading to the upgrading of SME mechanical equipment manufacturers through demonstration programmes and the design and transfer of manufacturing technologies developed by the African Regional Centre for Engineering Design and Equipment Manufacturing (ARCEDEM) with the assistance of UNIDO. UNIDO's assistance has also helped to design prototypes and training capabilities at the Engineering Development and Service Centre (EDSC) located at the Kenya Industrial Research and Development Institute (KIRDI), especially in agricultural machinery. Similar assistance has been expanded to the Engineering Design and Tool Enterprise (EDTE) in Ethiopia in developing designs, prototypes and small series production capabilities. In the Asian and Pacific region, UNIDO has successfully established a regional network for agricultural machinery.

At the enterprise level, UNIDO's assistance has, for example, helped the Soroti Agricultural Implements and Machinery Manufacturing Company in Uganda to strengthen its operations as a training and manufacturing facility. The company is thus increasing its market share. In Kenya, artisanal workshops (Jua Kalis) in the informal sector have been upgraded to undertake the repair and maintenance of various types of equipment, while in Ethiopia the Akaki Spare Parts Factory has been supported to move into the series production of agricultural hand tools and transport equipment as well as to promote its products in other countries in the subregion.

(c) Chemical industry inputs to agriculture

In the chemical industrial subsector, a thematic regional programme on **biomass energy** has been launched in its preparatory phase in Ghana, Uganda and Tanzania. In four African LDCs - Malawi, Rwanda, Tanzania and Zambia - safer technologies for pesticide application have been promoted and assistance extended to recently privatized pharmaceutical enterprises in Cape Verde. At the institutional level, a plastic development centre has been established in Nigeria to promote production and application of plastics in industry, agriculture and household, as well as for export. Support has also been extended to the National Centre for Pharmaceutical Research and Applications in Madagascar.

Essential oils production in Tanzania, Madagascar, Ethiopia and Zimbabwe has been improved through the introduction of efficient technologies and modern methods for quality improvement. The assistance for modernizing clove oil production in Tanzania and introduction of market strategies have enabled the distillery in Zanzibar to triple its export earnings. The National Pharmaceutical and Research Development Centre in Nigeria was assisted in the development of processing packages and medicinal and aromatic plants and in training scientists in the region.

Better quality control in the processing of African **natural rubber** and the development of specific blends to match market requirements added value to local production and increased competitiveness on world markets.

The use of **industrial minerals** in agriculture for soil conditioning, water retention and enhanced plant growth has been promoted in a number of African countries. Through a series of training programmes, the use of non-metallic mineral sorbents including bentonite, perlite and zeolite has been made available to professionals both in the industrial and the agricultural sectors. A case in point is Ethiopia where field experiments have been carried out in order to demonstrate the dramatic increase in the yield of crops such as wheat and sorghum on arid soil which has been conditioned through the addition of bentonite (a locally available clay mineral with exceptional ion exchange capacity and water absorption properties). Lime has also been used as an additive for correcting the pH of soils and a spin-off of the UNIDO assistance to the Ethiopian Marble Industries has been the promotion of the use of the cutting slurry originating from the slab

and tile processing lines. Isolation of the slurry mud from the water and its application in agriculture as a soil conditioner not only improves food production but solves an environmental problem of the industry by allowing the water to be discharged in a cleaner form.

APPENDIX B

PROJECT REHABILITATION STRATEGY

1. The role of the government in the development of a national rehabilitation package

Until now, most work on industrial rehabilitation has not been systematic or comprehensive. Rehabilitation has been viewed either as the treatment of a plant's technical problems - without analyzing the real causes or their ramifications - or as a macroeconomic issue. In the first case, technical assistance activities have often been carried out in isolation from the fiscal, monetary and economic policies of the government, without taking into account financial requirements, market possibilities, the availability of raw materials, the adequacy of management and other human resources, and intermediate outputs. This approach has frequently resulted in rehabilitation strategies that were too narrowly focused. Concentration on solving individual problems runs the risk of other equally important problems being ignored. In the second case, the diversity of economic activities and economic constraints and potential at the micro level is not always appreciated.

The concept of industrial rehabilitation obviously needs to be broadened and integrated: it should combine an understanding of both macroeconomic forces and real problems at the plant level. It should encompass a broader diagnosis and recommend a wider range of action. Manufacturing enterprises are not "islands unto themselves". They exist in an economic environment which is ever-changing. Manufacturing enterprises should therefore be studied in relation to their total economic environment. Diagnostic analysis and remedial action programmes should cover the entire range of technical, managerial and technology issues at the plant level as well as the overall financial, commercial and structural issues at the branch, subsector, sector and macroeconomic levels.

Emphasis on a few strategic firms with good linkages in key subsectors concentrates resources where they can have most impact. It also maximizes the multiplier effects of any given investment - in that, should these firms be successfully rehabilitated they will exert a significant "pull-effect" on other similarly place firms. They thus become the motors to start the regeneration process going and provide the dynamism for more widespread economic growth.

In order to examine a plant in its total work environment a multi-disciplinary approach is required which includes an analysis of the firm in terms of the macro and industrial economic, financial management and organization, human resource development, marketing, design and engineering, and technological dimensions. This multidisciplinary approach is absolutely essential in order to avoid the piece-meal approach and "situate" the firm in its total working environment. This approach ensures that the real reasons why plants do not work to their optimum potential - which may not be just at the plant level - are identified. The approach also allows the elaboration of a more appropriate and broader set of actions to rehabilitate the firm so that it is able to be profitable and compete successfully in an ever-changing environment.

Rehabilitation can thus be seen to be a process that has technological, organizational and managerial implications. It also has economic, financial, marketing, design and engineering aspects. Similarly, restructuring at the subsectoral level should take into account economic and financial aspects, as well as the general and technical management structure, product technology and range, and domestic and foreign markets. The wide range of issues involved implies that human, physical and financial resources should be concentrated on a few manageable projects or markets, and attention should be focused on technological developments and market expansion.

As the approach covers a wide range of issues, successful implementation requires the mobilization of resources from domestic entities, both public and private, and from foreign multilateral, bilateral, commercial and financial bodies. The activities of these entities should be coordinated to provide assistance to plants, subsectors and overall industrial regeneration.

It may be particularly appropriate at the present time to establish a National Rehabilitation Programme (NRP) at the Ministry of Industries. It's task should be to conduct sectoral surveys, identify key firms in each sector and develop appropriate rehabilitation strategies.

Assistance should be sought from financial institutions, FPCCI, and multilateral agencies to finance sectoral rehabilitation programmes. A National Rehabilitation Fund may be established and it should include

(a) representatives of all NCBs and DFIs;
(b) representatives of private and foreign financial institutions;
(c) representatives of IFC, ADB, UNIDO and bilateral donor agencies.

Resources for the fund should be provided by its members and by the government. Rehabilitation programmes of individual institutions should be contexted by and coordinated through the NRF and the National Rehabilitation Programme.

2. Project rehabilitation strategy for banks

The first step in the development of a rehabilitation strategy is an identification of borrower and depositor pattern within the bank. Problem loan sponsors may also be sponsors of projects which are doing well, They may also be depositors and involved in capital market operations of a bank. Japanese banks routinely monitor such client - linkage systems and this activity has paid rich dividends as the 1994 and 1995 exercises concerned with the restructuring of $80 billion worth of problem loans in Japan has shown. Knowledge of client linkages should be useful in developing incentives which can enhance borrower willingness to cooperate with the bank in the development and implementation of viable rehabilitation strategy.

The second step should be a thorough review of the existing portfolio - a long form audit would prove very useful.

As the problems faced by the projects are often interlinked - the management problem, for instance, could affect production, financial and marketing aspects of the operation - it is necessary to do a complete diagnosis of the principal feasibility criteria of the projects. This will mean going back to the original appraisal reports and ascertaining the ex-post status of the various aspects and the accuracy of the evaluation. In short, it is important to find out "where things went wrong" in order to understand the situation of a particular project fully. The diagnostic phase often takes many weeks of analysis and interaction with both the client and the original appraisal team.

After completion of the diagnostic review of a sizeable number of projects, rehabilitation packages should be developed preferably on the basis of advice of Japanese or Republic of Korean experts who have been extensively involved in rehabilitation work. A special task force consisting both of bank and Japanese>Korean international consultants may be formed. Rehabilitation packages for say fifty projects would be developed by this task force over a six to nine month period and implementation initiated. At the end of the six/nine month period the bank staff should take over from the foreign consultants.

Rehabilitation monitoring involves five distinct steps:

(a) Setting annual goals:

Initially goals for the first year a re set in the turn around plan. There after the goals are set in the annual plan;

(b) Monthly review meeting:

A monthly review meeting is held, preferably by visiting the client, to review and discuss problems.

(c) Tracking of goals:

Actual performance data is gathered in the monthly meetings and compared with agreed upon targets - ihe actual - versus - plan data is carefully reviewed to identify any deviations from plan.

(d) Analysis of deviations:

When a deviation occurs, the data is analyzed, and the situation discussed to understand reasons for the deviation and evaluate the seriousness of the problems.

(e) Remedial action

- When a deviation from plan reveals problems its causes are understood, then plans are made to remedy the problems.

Monitoring should in principle be undertaken for all projects. A routine review of accounts that become irregular would indicate whether problems faced are of a temporary or a permanent nature. If the later is the case problems should not be allowed to accumulate, discussions with the client should be initiated and a restructuring packaged agreed and implemented. Often this would be sufficient to forestall major sickness.

Two other initiatives that need to be taken are:

(1) Development of a project evaluation capacity. A major cause of project sickness is the absence of project evaluation capacity within the bank. A Project Evaluation and Monitoring Department should be set up as soon as possible. Project evaluation should take place.

(a) At the time of the sanctioning of a term financing facility even if the bank is providing this as a part of a consortium. The bank should not rely exclusively on the feasibility study approved by the lead bank in the consortium

(b) Feasibility/project evaluation reports should also be prepared at the time of sanctioning and renewal of working capital limits if these exceeds Rs. 1 million - many of our sick unites are those which obtained running finance facilities from the banks.

(c) Project evaluation reports should also be prepared for all projects in which our commitment exceeds Rs. 10 million after every three years. Project evaluation costs in all cases should be borne by the sponsor.

(2) Establishment of an autonomous Acquisitions and Merger Company preferably in association with the private sector. Merger is one of the most effective rehabilitation mechanisms. The rehabilitation of most closed projects can be facilitated by this means. Mergers can also increase vertical and horizontal integration of Pakistani industries - specially textiles and engineering units. There is a vast gap in the market in this respect and a national company with adequate resources can make good profits and contribution to national industrial revival by promoting acquisitions and merger activity.

Project rehabilitation is not an automatic consequence of the sporadic rescheduling of loans undertaken usually at the close of the financial year - this results in a mere postponing of problems and an inevitable accumulation of uncollectible debt. Project rehabilitation on the other hand increases the capacity to pay off the borrowers and thus contributes to a genuine improvement in the quality of the bank/s portfolio.

3. Some suggestions for sponsors of stuck up projects

(1) In the case of groups owning both healthy and sick projects possibilities of transfer of assets should be considered. This requires settlements with financiers to obtain release of mortgaged assets.

(2) Business organizations such as local chambers of commerce and industry should prepare sectoral rehabilitation strategies with concrete financing proposals. Sectoral rehabilitation strategies could then jointly be executed and pressure should be brought to bear upon individual sponsors to ensure that commitments are met according to an agreed time schedule.

(3) In countries such as Japan, the Republic of Korea and Taiwan Province of China leading industrial enterprises operate strategies for local development. This ensures optimum vertical and horizontal integration between large and small enterprises. It also ensures that assets - especially human assets - can easily be deployed from closed or sick units to the large enterprises. The revival of local sick units becomes a concern of the major industries in the area since they depend a great deal on local sourcing. Such local development strategies could be formulated by major Pakistani enterprises.

(4) Sponsors should understand that they and their financiers have a common interest in preventing industrial sickness and project rehabilitation. They must accept that financiers have a legitimate right to monitor projects regularly. They must be willing to supply information and develop information systems which can be useful for preventing sickness and for project rehabilitation.

(5) Requests for restructuring and rescheduling of loans are usually inadequate. Banks are principally concerned to ensure that restructuring will lead to enhanced profitability and that the increased financial obligations are sustainable. It is therefor essential that restructuring requests be supported by projected balance sheets and income statements and justifications of assumptions on the basis of which these assumptions have been made.

(6) It has often been the case that funds have not been used for the purpose for which they were obtained. Working capital finance has been used for purchasing machinery or construction. In the textile industry it has often been the case that funds committed for repayment of bank dues have been used to purchase quotas. Such action should be avoided as it invariably undermines project viability in the long run.

Conclusions

This paper has stressed throughout that sponsors, banks and government equally share the responsibility for the proliferation of project sickness. Neither banks nor government agencies nor sponsors have the resources to deal with this gigantic problem single handedly. It is in the national interest that they develop an extensive system for sustained collaboration over a long time period to eliminate project sickness from African industry.

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